

AUTO OPPORTUNITIES

MOTOR OFFICIAL VISITS EUROPE TO ATTEND SHOW

Claude Sauzedde, designing engineer of the Maxwell Motor Corporation, has returned to the local office of the company after a trip of two months to England, Belgium and Switzerland, during which time he attended the London automobile show and visited leading motor car manufacturing plants of England and the continent.

Mr. Sauzedde reports extensive recent activity among manufacturers of France, Belgium and Italy in developing chassis to a tendency on the part of English builders to give greater emphasis to fine coach work. In chassis design, England offers nothing particularly new, he asserts, while leading continental makers have adhered to a conservative policy of mechanical advancement not dissimilar to the course pursued by those American manufacturers who have wished to keep their products thoroughly modern without resorting to freakish experiments that might prove costly to the car owner.

European roads, which have long been regarded as far superior to our own, can no longer lay claim to this distinction, according to Mr. Sauzedde. He states that the heavy truck traffic during the war has caused the deterioration of many of the highways, and most of the European countries have been unable to keep roads in repair. During the same period, American roads have been rapidly improved and are given constant maintenance care.

That improved roads here might mean changed design in certain features of motor car construction, is one possibility expressed by Mr. Sauzedde. He believes that only a few American manufacturers have shown in the design of their cars that full cognizance has been taken of the improved highway conditions which we now enjoy. In this respect much can be learned from European motor car builders who long ago adapted their products to take full advantage of improved road conditions.

MAC-DRY STORAGE BATTERIES NOT AN EXPERIMENT

The Mac-Dry automobile and radio storage batteries are not an experiment by any means. This particular type is a time tested and tried out storage battery. It is not a so-called "experiment" to be tried out at the expense of the motoring public. In California, where the Mac-Dry factory is located, motorists are reporting four and more years of continuous service without even having to recharge their batteries from outside sources. This battery has been on the market for nearly six years and during that time it has met with very few changes, while it has been subjected to many severe tests and tried out under severe working conditions—always proving its merits.

Within a period of six months or one year, Mac-Dry storage battery service will be obtainable in all large cities where owners will be assured of FIRST CLASS STORAGE BATTERY AND ELECTRICAL SERVICE.—Adv.

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Come today and see these used Car Bargains. A Demonstration Will Satisfy You

TEN FORDS, TOURINGS, SPEEDSTERS, WITH OR WITHOUT STARTERS; SEVENTY-FIVE DOLLARS UP.

\$325 buys 1918 Dodge Touring, motor overhauled, new top, etc.

\$450 buys D-45 Buick, A-1 condition, repainted and rebuilt.

\$250 buys E-45 Buick Touring, well worth the money.

\$450 buys Paige Six Touring, A-1 condition.

\$375 buys Oakland Six Touring, 1920 model.

\$275 buys Dodge Touring, 1919 model, A-1 condition.

\$250 buys Studebaker Sedan, 1918 model, real bargain.

\$200 buys Huppmobile Touring, model X.

McINTOSH AUTO COMPANY

"We Undersell Everybody"
511 West Copper Avenue
Phone 562.

UNIFORM WARNING BY TRUCK SIGNALS IS STRONGLY ADVOCATED

C. S. Mott, vice president of General Motors is a strong advocate of uniform warning signals in connection with the operation of motor vehicles.

"With the increasing frequency of interstate truck operation," says Mr. Mott, "and the fact that passenger cars often make long tours, some exact standard in warning signals is absolutely imperative. It is hard to understand why there should be any great difficulty in unifying practice. The men in the freight yards at San Francisco can handle freight in New York and vice versa. A brakeman on a through freight does not have to learn local signals for every town, or even every state, that he passes through. The signals trouble and annoyance, and even for danger."

"Experience in driving, all over the country, convinces me that the system of signals in use on the Pacific coast is the most logical and reasonable one. There is no chance for misunderstanding and I should be glad to see them adopted as the standard for the entire country. As it is now, there are important differences in the form of automotive traffic control used in the different centers; this makes for trouble and confusion, and even for danger."

"It is of course out of the question to utilize the familiar safety devices used on the railroads to control the movement of traffic. Neither the highway nor the city street lends itself to the operation of block signals. What can be done, and what should be done as speedily as possible, is to secure uniformity of warning signals given by operators of motor vehicles, passenger and commercial, and uniformity of traffic direction and regulation by traffic officers the country over."

PRESIDENT HARDING PRESENTS DIPLOMAS TO CONTEST WINNERS

Sponsored by the Colorado congressional delegation, Mrs. Anne Rogers, a teacher of Sterling, Colo., was received at the White House recently and presented by President Harding with a diploma of honor in recognition of her success in having contributed the best safety lesson submitted in a teachers' contest conducted as part of the 1922 national safety campaign. At the same time J. Schuyler Loomis, 14 years old, Linerick, N. Y., winner in a safety essay contest, conducted by the National Grange, was presented to the president and received a certificate of merit. He was sponsored by members of the New York congressional delegation.

The presentation exercises culminated a week's entertainment in honor of Mrs. Rogers and the New York boy, provided by the National Automobile Chamber of Commerce which gave Mrs. Rogers \$500 in cash and the expenses of a trip to Washington, and Mr. Loomis a gold medal and a trip to Washington as tokens of their success.

Dr. John J. Tigert, United States Commissioner of Education, made a brief speech introducing to the president the winners and those accompanying them. Dr. Tigert is chairman of the Highway Education board, which conducted the contest, and is now concluding a second national safety campaign.

Mrs. Rogers was presented by Senator Lawrence C. Phillips and Representative Charles E. Timmerlake of Colorado. Mr. Loomis was presented to the president by Senator James W. Wadsworth, Jr., and Representative Luther W. Mott of New York. The president congratulated the winners, and in behalf of the Highway Education board and the National Grange presented them with their diplomas.

THE COOPER MOTOR COMPANY MOVES TO LARGER QUARTERS

Sales and service for the famous line of Chevrolet cars after January 1st will be located at 211-213 North Fourth street, the old Southwest Motor company stand.

The new location, larger and better equipped, and shop will enable the Cooper Motor company to even better serve their customers than heretofore. They cordially invite the public to visit them in their new home and to inspect the New Superior Model Chevrolets. It is surprising that even the Chevrolet Motor company, the world's largest manufacturer of standard quality automobiles, can produce so much automobile for so little money.

Wish K. K. K. stood for Kool Kar Koning.—Brooklyn Eagle.

The Trouble Shooter



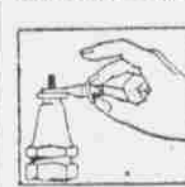
TELLS YOU
what's wrong

By E. H. SCOTT

This is the seventh of a series of specially prepared and illustrated articles showing the ordinary automobile driver how to locate any engine trouble

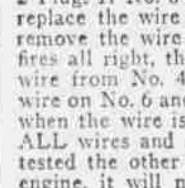
How To Test Your Engine To Find Spark Plug and Valve Trouble

Last week you were shown how to test the Ignition System while the engine is running. We assume you have tested this, and found that it is all right, so now proceed to test the Plugs and Valves.



1. Take off all nuts from the tops of the Spark Plugs, but leave the wires resting on the Plugs. If you have quick detachable terminals on the Plugs this will not be necessary, so—

2. If you have a four or six cylinder engine, then lift off all Spark Plug wires BUT THE ONE ON THE PLUG IN THE CYLINDER NEXT TO THE RADIATOR, taking care to ground the end of each wire as you take it off by laying it in contact with the metal cylinder. As you take off each wire, you will notice that the engine slows down, so after you take it off, move the throttle lever up a notch to keep the engine running at a moderate speed. Now you have the engine running on No. 1 cylinder only. If No. 1 cylinder fires regularly, replace the wire on No. 2 Plug, THEN remove the wire from No. 2 Plug. If No. 2 cylinder fires regularly, replace the wire on No. 3 Plug THEN remove the wire from No. 2 Plug. If No. 3 cylinder fires regularly, replace the wire on No. 4 Plug, THEN remove the wire from No. 3. If No. 4 fires all right, then replace the wire on No. 5 Plug and remove the wire from No. 4 Plug. If No. 5 fires all right THEN replace the wire on No. 6 and remove the wire from No. 5. If the engine STOPS when the wire is left on ONE PARTICULAR PLUG, then replace ALL wires and start the engine again and continue until you have tested the other cylinders. If you have an eight or twelve cylinder engine, it will not usually run on one cylinder only, so test each cylinder separately by opening the Priming Cocks just a little, until you hear the sound of the explosion. Do not open the Cock wide open, as you are not able to test as well as you can by opening it just a little. If the cylinder is firing you will hear a good "crack" and if you look down will see a flame. After opening up a Cock, take a wooden handled screw driver, then short the Plug by connecting the top of the Plug and the Cylinder with the metal part of the screw driver. This will instantly show you the difference in sound between a cylinder that is firing and one that is not.

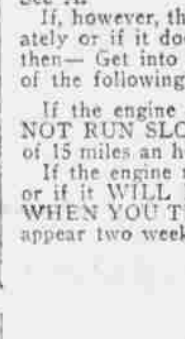


If the engine STOPS ONLY WHEN THE WIRE IS LEFT ON ONE PARTICULAR CYLINDER, OR MISSES AN EXPLOSION NOW AND AGAIN ON ONE PARTICULAR CYLINDER ONLY. See A.

If, however, the engine fires on EACH cylinder when tested separately or if it does not fire very regularly on ANY of the cylinders then—Get into the car and drive it along the road, noticing which of the following agrees with the way it performs—

If the engine misfires at LOW SPEEDS ONLY or if it WILL NOT RUN SLOWLY WHEN IDLING, yet runs alright at speeds of 15 miles an hour and over, see article eight next week.

If the engine misfires or hunts at MEDIUM or HIGH SPEEDS, or if it WILL NOT ACCELERATE or STOPS ALTOGETHER WHEN YOU TRY TO SPEED UP, then see article nine which will appear two weeks from today.

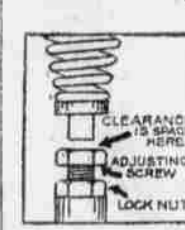


1. Take out the Spark Plug and see that it is clean and that the gap is correct. It should be just a trifle LESS than the thickness of a WORN dime. If the Plug is covered with an OILY, BLACK GUMMY deposit, and you have been keeping the oil in the crankcase at the proper level, and using the correct grade of oil, about the only cure is to have new Piston Rings fitted and the Valves ground in. If, however, the Plug is covered with a DRY BLACK deposit like SOOT, your Carburetor is adjusted too rich, have it cut down to run with a leaner mixture. If the Points are WET, you either have a leaking cylinder head gasket or a cracked cylinder, which allows water to creep into the cylinder.

One of the best ways to clean Spark Plugs, is to soak them in a mixture of alcohol and kerosene all night, then in the morning the carbon on the porcelain can be rubbed off with a piece of rag. NEVER use emery cloth or sandpaper to clean the porcelain. It has a highly glazed surface that is easily scratched. When the glass becomes roughened, it quickly oils up again. The points of the Plug and the metal parts can, of course, be cleaned with a piece of emery cloth.

Examine the porcelain carefully to see if it is cracked. If it is then fit new Plug.

If the Plug APPEARS to be all right, then screw out a Plug from a cylinder that you KNOW is firing regularly, and put it into the defective cylinder and test the cylinder again. If the engine now fires on the cylinder, it proves that the first plug, although it appeared to be all right, is defective and must be replaced. If, however, there is STILL no explosion then—



2. Examine the Valves in the defective cylinder to see that the clearance (as shown in Article Five, No. 8) is correct. If all right, then—

3. Start up the engine and watch the action of the Valves in the defective cylinder, to see if the bottom of the Valve Stem follows the top of the Valve Tappet. If the Tappet comes down and the Valve follows a little later, the stem is sticking in the guide, showing it has warped. If it is sticking try and free the Valve by squirting a little kerosene down the Valve Guide when the engine is running if possible. If, however, the Clearance is all right and the Valve shows no signs of sticking then—

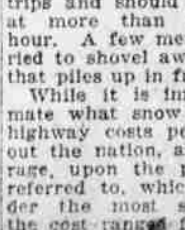


4. Test tension of the Spring on the Valve to see that it is not too weak. To do this insert the blade of a screw driver between the coils of the spring while the engine is running. If this causes the engine to pick up speed, the spring is weak and should be replaced. If, however, it makes NO difference then—

5. If you have a detachable cylinder head on the motor, examine to see if the gasket is blown out at any point. If it is blown INSIDE the head it will affect the TWO cylinders between which it is blown.



per mile, while in a milder winter the cost was but from \$10 to \$50 per mile. Certainly this is a very small cost in comparison to the needs of the nation for adequate highway transportation all the year, apart from the usefulness of snow clearance in helping to maintain improved roads.



EFFICIENCY OF SNUBBERS
Spring check leaves are excellent things, particularly for country driving. They are, in reality, snubbers, preventing up-kick, yet not curtailing the downward motion of the body of the car. Practically speaking, they are half-length, almost flat leaves, placed on the top of the springs. When the rebound comes they hold the body in gentle check and are ideal for fast going over a rough road.

NINE STUDEBAKER VETERAN CARS SCORE RECORDS

A remarkable test of motor car economy and reliability in which nine veterans of motor-dom participated, was recently held on the Pacific coast. All nine cars were Studebaker Big Sixes. Prior to the contest, they had covered, in every-day service, a total of 1,353,463 miles—an average of 148,166 miles per car.

Before the run the two "patriarchs" among the nine contestants showed mileage records of 250,000 and 351,000 miles respectively. The minimum mileage showed on the speedometer of any of the cars was 62,007 miles. The contest stands as the first of its kind ever held, and proved a practical and convincing demonstration of motor car stamina, reliability and economy.

The course of the run was from Los Angeles to Big Bear valley and return, a distance of 239 miles, of which 90 miles were over steep, rough mountain roads that necessitated stamina in every part. Each of the veteran cars reached every checking station on time, and only two failed of perfect scores, one having died in the gasoline pipe and the other requiring a slight adjustment of the brakes.

The veteran cars were taken from every-day service to enter the contest and were returned to their owners immediately after the run.

Curiously enough, the two cars which had covered a mileage of

250,000 and 351,000 miles respectively had been subjected to perhaps the most severe service of any of the nine in the contest. These two cars make two round trips daily between Los Angeles and Santa Barbara. Both registered perfect scores in the contest of veterans.

The car with the 350,000 mile record took second honors in economy among the nine contestants. The highest economy record was scored by a Big Six which had 95,000 miles to its credit.

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Storage Battery, supreme for car or radio. NO ACID—NO WATER—NO ATTENTION. A written factory guarantee for THREE YEARS' service with each and every MAC-DRY Storage Battery.

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AGENTS.—There are a few towns in our territory which are unassigned as yet. Better get next to this.

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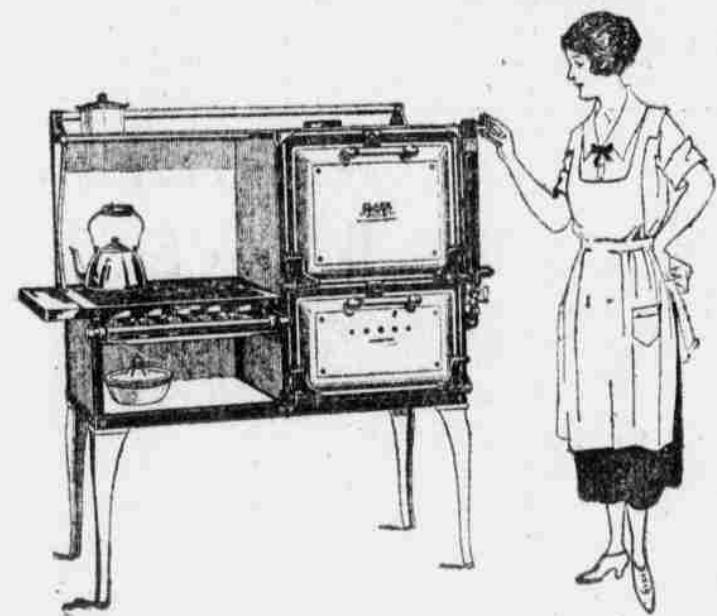
The Cooper Motor Co.

At Home, January First, 1923

211-213 North Fourth Street

(The Old Southwest Motor Company Stand)

STARTING JANUARY 2, 1923, WE WILL OFFER THE GREATEST SACRIFICE PRICE EVER OFFERED ON ANY GAS RANGE IN OUR STORE



Remember this change in our Gas Department starts January 2nd, and for any gas range you purchase from us we will run the service, connect and have everything ready for you to use the range; for just the price of the range itself. This is provided the gas is to the property line. Those that have gas already in their home a 10 per cent reduction will be given on any range, and the range will be connected at that price. Remember this is the greatest saving you have ever been offered on any gas range and it is just the time you need to get your gas installed for summer's use. We have the best line of any gas ranges that are on the market. They are the Clark Jewel and are equipped with the Lorain Oven Heat Regulator.

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And that means ready for you to use the range whether the gas is in the home or not. Just so it is to the property line.

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